



## APPEAL BRIEF TRANSMITTAL LETTER

March 24, 2007

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Re: Applicant: Daniel SauFu Mui  
Assignee: ZiLOG, Inc.  
Title: "Relaying Key Code Signals Through a Remote Control Device"  
Serial No.: 10/737,029  
Examiner: Vernal U. Brown  
Atty. Docket No.: ZIL-568  
Filed: December 16, 2003  
Art Unit: 2612

Dear Sir:

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- (1) appeal brief (37 pages);
- (2) a check for the appeal brief fee (\$500);
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TOTAL CLAIMS	26	minus	26	0	\$50	\$0.00
INDEP. CLAIMS	7	minus	7	0	\$200	\$0.00
Total Additional Claim Fee						\$0.00
Fee for Appeal Brief [§41.20(b)(2)]						\$500.00
Fee for Request for Oral Hearing [§41.20(b)(3)]						\$0.00
Fee for Extension of Time ( __ month) [§1.17(a)(1)]						\$0.00
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By Darien K. Wallace  
Darien K. Wallace

Date of Deposit: March 24, 2007

Respectfully submitted,

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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Appellant: Daniel SauFu Mui

Assignee: ZiLOG, Inc.

Title: "Relaying Key Code Signals Through a Remote Control Device"

Appl. No.: 10/737,029

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**APPEAL BRIEF**

This Appeal Brief is filed pursuant to 37 CFR § 41.37 in support of the Notice of Appeal dated on February 19, 2007.

**I. REAL PARTY IN INTEREST**

The real party in interest is the assignee, ZiLOG, Inc., as named in the caption above.

**II. RELATED APPEALS AND INTERFERENCES**

Based on information and belief, there are no appeals or interferences that could directly affect or be directly affected by or have a bearing on the decision by the Board of Patent Appeals and Interferences (the "Board") in the pending appeal.

**III. STATUS OF CLAIMS**

The application at issue, filed on December 16, 2003, included 24 claims. In an amendment dated July 28, 2006, claims 25-26 were added. Claims 1-26 are subject to this Appeal.

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#### IV. STATUS OF AMENDMENTS

An amendment dated December 19, 2006, was filed subsequent to a final Office action dated October 19, 2006 ("Office Action"). An Advisory Action dated February 7, 2007 ("Advisory Action"), stated that the amendment was entered. The advisory action included an explanation of how the amended claims would be rejected.

## V. SUMMARY OF CLAIMED SUBJECT MATTER

The following summary pursuant to 37 CFR §41.37(c)(1)(v) is a concise explanation of the claims and is to be read in light of the disclosure. This summary does not limit the claims. (See MPEP §1206).

An embodiment of Appellant's novel system 10 is illustrated in figure 1 (replicated below). System 10 relays a key code through a remote control device

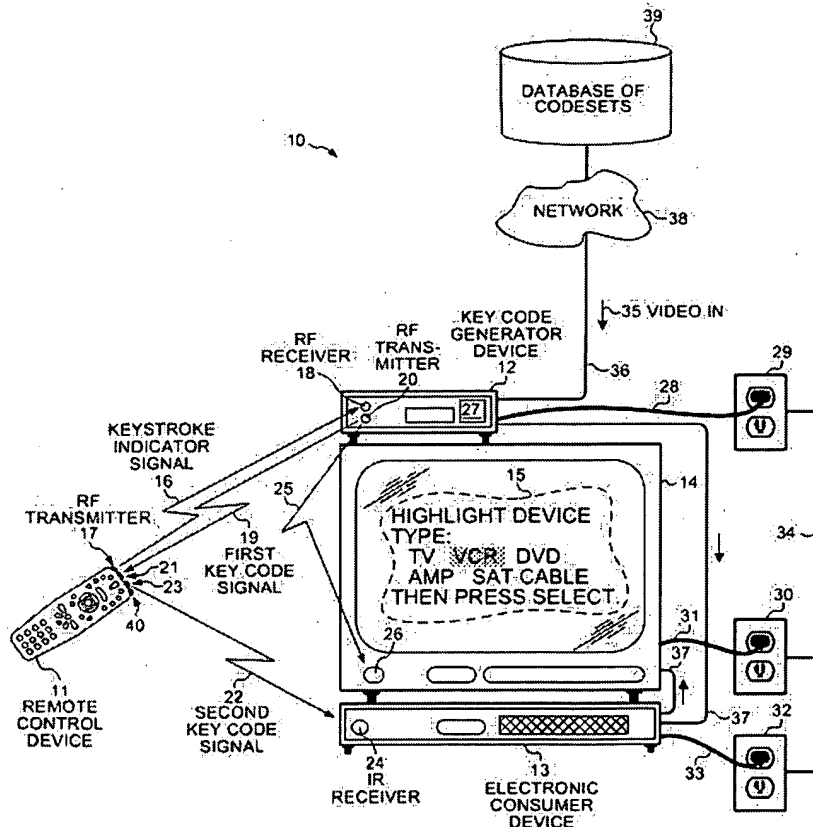


FIG. 1

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to an electronic consumer device. The key code is not stored in the remote control device in a permanent manner, but rather is relayed through the remote control device. System 10 includes a remote control device 11, a key code generator device 12, a first electronic consumer device 13 (a VCR) and a second electronic consumer device 14 (a TV).

Upon receiving a keystroke indicator signal from remote control 11, key code generator 12 identifies the particular codeset usable to communicate with the selected electronic consumer device. The keystroke indicator signal contains an indication of a key on the remote control that was pressed, which corresponds to a function of the selected electronic consumer device. Using the identified codeset and the indication of the pressed key, key code generator 12 generates a key code and modulates that key code onto a radio frequency carrier signal, thereby generating a first key code signal 19. Remote control 11 receives first key code signal 19 from key code generator 12 and modulates the key code onto an infrared frequency carrier signal, thereby generating a second key code signal 22. Remote control 11 relays the key code to the selected electronic consumer device in second key code signal 22. The key code causes the selected electronic consumer device to perform the desired function.

**A. Independent claim 1**

Independent claim 1 is directed to a method of generating a key code within a key code generator device, as described in steps 101 through 104 in figure 2 (replicated below). As shown in figures 1 and 2, claim 1 recites a method of (a) receiving keystroke indicator signal 16 from remote control device 11 (Specification, p. 6, lines 26-28); (b) generating a key code within key code generator device 12 (Specification, p. 8, lines 14-16); (c) modulating the key code onto a carrier signal thereby generating first key code signal 19 (Specification, p. 8, lines 26-29); and (d) transmitting key code signal 19 from key code generator device 12 (Specification, p. 11, lines 4-5).

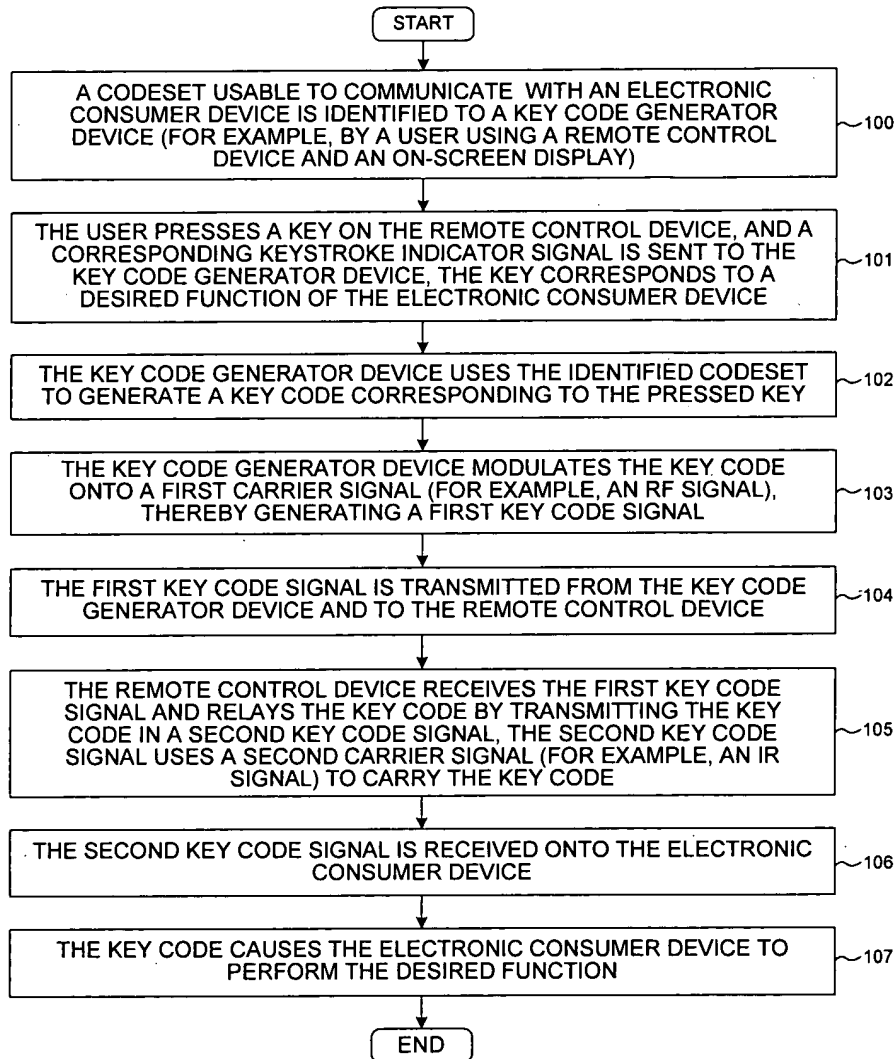


FIG. 2

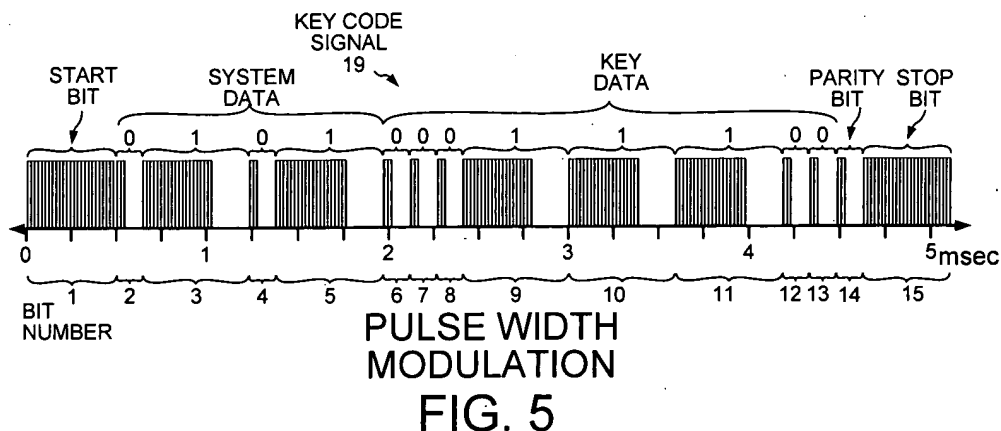
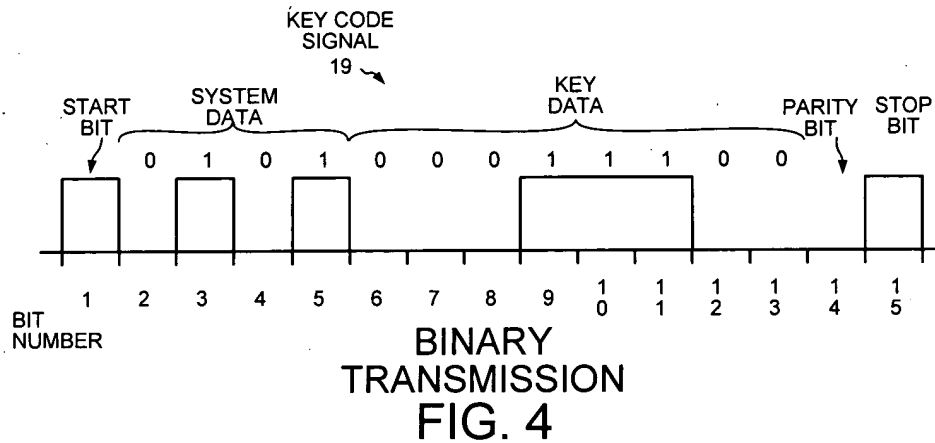
Dependent claim 2 is directed to the method of claim 1, but includes the limitation that first key code signal 19 is transmitted from key code generator device 12 to remote control device 11 (Specification, p. 11, lines 6-7).

Dependent claim 3 includes a limitation that first key code signal 19 is transmitted from key code generator 12 to the selected electronic consumer device (Specification, p. 12, lines 13-15). Dependent claim 4 includes the limitation that the key code consists of a binary number (Specification, p. 8, lines 18-20) as depicted in figure 3 (replicated below).

0 1 0 1 0 0 0 1 1 1 0 0  
 SYSTEM CODE KEY DATA

KEY CODE  
 FIG. 3

Dependent claim 5 includes the limitation that the key code comprises a binary number and timing information. The timing information defines how said binary number is modulated onto the carrier signal to generate first key code signal 19 (Specification, p. 9, lines 9-11) as depicted in figures 4 and 5 (replicated below).



Dependent claim 6 includes the limitation that keystroke indicator signal 16 corresponds to a power-on function, and first key code signal 19 is received

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onto an electronic consumer device and causes the electronic consumer device to be powered on. Dependent claim 7 recites that first key code signal 19 is received by remote control device 11 and includes the further steps of (e) modulating the key code onto a second carrier signal, thereby generating second key code signal 22 (Specification, p. 11, lines 8-11) and (f) transmitting second key code signal 22 to the selected electronic consumer device (Specification, p. 12, lines 1-3). Claim 7 also includes the limitation that the first carrier signal is in a radio frequency band and the second carrier signal is in an infrared frequency band.

Dependent claim 8 is directed to the method of claim 7, but includes a further limitation that keystroke indicator signal 16 corresponds to a power-on function, and second key code signal 22 causes the selected electronic consumer device to be powered on (Specification, p. 12, lines 4-7).

Dependent claim 9 includes the limitation that the key code is part of a codeset and that the codeset is not stored in remote control device 11 (Specification, p. 19, lines 11-13). Dependent claim 10 is directed to the method of claim 9, but includes a limitation that the codeset comprises timing information and a plurality of key codes. Furthermore, the timing information describes a digital one and a digital zero, as described at page 11, lines 26-28, of the Specification.

#### **B. Independent claim 13**

Independent claim 13 relates to remote control device 11 shown in figure 1. Remote control device 11 comprises: an RF receiver 21 that receives a first key code signal 19 (Specification, p. 11, lines 5-6); an IR transmitter 23 that transmits a second key code signal 22 (Specification, p. 11, lines 17-21); and a keypad that includes a key that corresponds to a key code. The key code corresponds to a function of an electronic consumer device. First key code signal 19 is generated by modulating the key code onto a first carrier signal having a radio frequency band. Second key code signal 22 is generated by

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modulating the key code onto a second carrier signal having an infrared frequency band.

Dependent claim 14 is directed to the remote control device of claim 13, but includes the limitation that the key code corresponds to the function and to a second function. The second function corresponds to a second electronic consumer device. Dependent claim 16 is directed to the remote control device of claim 14, but includes the limitation that the key code comprises a first binary number and a second binary number. The first binary number corresponds to the function, and the second binary number corresponds to the second function.

Dependent claim 18 is directed to the remote control device of claim 13, but includes the limitation that a codeset comprises timing information and a plurality of key codes. Each key code is a binary number and corresponds to a different function of the electronic consumer device. Furthermore, the timing information defines how the binary number is modulated onto the first carrier signal (Specification, p. 11, lines 26-28).

#### **C. Independent Claim 19**

Claim 19 is directed to a key code generator device and a means for relaying key codes from the key code generator device through a remote control device. The key code generator device generates a first key code and a second key code. Claim 19 recites a "means for relaying said first key code and said second key code from said key code generator device through a remote control device." More specifically, the first key code corresponds to a function of a first electronic consumer device, and the second key code corresponds to the same function of a second electronic consumer device (Specification, p. 15, lines 25-26). As illustrated in Figure 1, the corresponding structure includes remote control device 11.

#### **D. Independent Claim 22**

Claim 22 is directed to remote control device 11 comprising a key pad, RF



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receiver 21, IR transmitter 23, and a means for receiving a key code from RF receiver 21 and for sending the key code to IR transmitter 23. Claim 24 recites that the corresponding structure includes a microcontroller integrated circuit (Specification, p. 13, line 27).

**E. Independent claim 25**

Independent claim 25 is directed to a method for relaying a key code from key code generator 12 to an electronic consumer device through remote control device 11, and includes the steps 101 through 105 depicted in figure 2. Claim 25 recites a method of (a) receiving keystroke indicator signal 16 from remote control device 11 (Specification, p. 6, lines 26-28); (b) using keystroke indicator signal 16 to generate a key code within key code generator device 12 (Specification, p. 8, lines 14-16); (c) modulating the key code onto a carrier signal thereby generating first key code signal 19 (Specification, p. 8, lines 26-29); and (d) transmitting a key code signal from key code generator device 12 to remote control device 11 (Specification, p. 11, lines 4-7) and transmitting the key code signal to an electronic consumer device from remote control device 11.

Dependent claim 26 is directed to the method of claim 25 but includes the limitation that the key code is part of a codeset, and the codeset is not stored in remote control device 11 (Specification, p. 19, lines 11-13).

**VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

The following are grounds of rejection to be reviewed on appeal:

1) Claims 13-16, 19, 22, and 24-26 stand rejected under 35 USC §102(e) as being anticipated by Wouters et al. (US Patent 6,915,109).

2) Claims 1, 3-4, 9 stand rejected under 35 USC §103(a) as being unpatentable over Pope (US Patent 5,963,624) in view of McNair et al. (US Patent 5,595,342).

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3) Claim 2 stands rejected under 35 USC §103(a) as being unpatentable over Pope in view of McNair and further in view of Goldstein (US Patent 5,410,326).

4) Claim 5 and 10 stand rejected under 35 USC §103(a) as being unpatentable over Pope in view of McNair and further in view of Teskey (US Patent 6,747,568).

5) Claim 6 stands rejected under 35 USC §103(a) as being unpatentable over Pope in view of McNair and further in view of August et al. (US Patent 5,671,267).

6) Claim 7 stands rejected under 35 USC §103(a) as being unpatentable over Pope in view of McNair and further in view of Wouters.

7) Claim 8 stands rejected under 35 USC §103(a) as being unpatentable over Pope in view of McNair in view of Wouters and further in view of August.

8) Claim 18 stands rejected under 35 USC §103(a) as being unpatentable over Wouters in view of Teskey.

9) Claim 20-21 stand rejected under 35 USC §103(a) as being unpatentable over Wouters in view of August.

10) Claim 23 stands rejected under 35 USC §103(a) as being unpatentable over Wouters in view of Pope.

## **VII. ARGUMENT**

### **A. Claims 13-16, 19, 22, and 24-26 (1st ground of rejection)**

Claims 13-16, 19, 22 and 24-26 are rejected under 35 U.S.C. § 102(e) as being anticipated by Wouters et al. US Patent 6,915,109. (Office Action, p. 4, lines 1-2). "A rejection for anticipation under section 102 requires that each and

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every limitation of the claimed invention be disclosed in a single prior art reference.” *In re Paulsen*, 30 F.3d 1475, 1478-79, 31 USPQ2d 1671, 1673 (Fed. Cir. 1994) citing *In re Spada*, 911 F.2d 705, 708, 15 USPQ2d 1655, 1657 (Fed. Cir. 1990).

### **1. Independent claims 13 and 22**

Claim 13 recites, “A remote control device comprising: a receiver that receives a first key code signal . . . within a radio frequency band; a transmitter that transmits a second key code signal . . . within an infrared frequency band; and a keypad . . .” (emphasis added). Claim 22 recites, “A remote control device, comprising: a keypad; an RF receiver; an IR transmitter . . .” (emphasis added).

Wouters does not form the basis for a valid rejection under § 102(e) because Wouters does not disclose all of the limitations of either claim 13 or claim 22. Although Wouters discloses a system of devices including an IR remote control unit 3 in room 1 and an RF receiver 13 and an IR transmitter 14 in room 2, Wouters does not disclose a device with a keypad that both receives a signal within a radio frequency band and transmits a signal within an infrared frequency band.

The Examiner has not alleged that Wouters discloses a single device with a keypad that both receives an RF signal and transmits an IR signal. Instead, the Examiner states, “Wouters et al. teaches a remote control which includes the system of devices 1 and 2 (figure 1) comprising a receiver receiving a RF modulated remote control signal (col. 4 lines 25-28) and a transmitter transmitting an infrared modulated signal generated from the received RF signal (col. 4 lines 28-33).” (Office Action, p. 4, lines 3-6). The Examiner’s statement that Wouters discloses a system of devices 1 and 2 that comprise an RF receiver and an IR transmitter is insufficient to allege a *prima facie* case of anticipation of claims that recite a device comprising a keypad, a receiver and a transmitter. In fact, the only keypad disclosed in Wouters is on remote control unit 3, which is located in a separate room (room 1) from RF receiver 13 and IR transmitter 14 (room 2).

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The remote control unit 3 described at column 4, lines 48-57, includes IR transmitter 4 and RF transmitter 8, but does not include an RF receiver. Thus, the Examiner does not state that Wouters discloses a single device with a keypad, an RF receiver and an IR transmitter. Nor does Wouters disclose a device with all three of these elements.

In the Advisory Action, the Examiner states, "Regarding applicant's argument regarding the system of devices as disclosed by Wouters, it is the examiner's position that the remote control device as claimed, is not limited to a single housing" (Advisory Action, p. 2, lines 2-3) (emphasis added). The Examiner then again cites column 4, lines 25-28, column 4, lines 28-33 and column 4, lines 44-58, of Wouters as disclosing all of the elements of claims 13 and 22. The Examiner is improperly interpreting the claim term "remote control device" contrary to how that term is used in the claims and in the specification. Both claims 13 and 22 recite a "device" and not a "system". As the term "remote control device" is depicted in the drawings and used in the specification, such a "remote control device" does not describe a "system" with an RF receiver in one room of a house and an RF transmitter in another room of the house.

Finally, this statement that disavows any claim scope to a "remote control device" with an RF receiver in one room and an RF transmitter in another room is dispositive to claim interpretation. By virtue of this disclaimer of claim scope, the term a "remote control device" is to be interpreted as excluding a "system" with multiple components in separate rooms. *See Invitrogen Corporation v. Biocrest Manufacturing*, 327 F.3d 1364, 1368, 66 USPQ2d 1631, 1633 (Fed. Cir. 2003); *Inverness Med. Switz. GmbH v. Princeton Biomeditech Corp.*, 309 F.3d, 1365, 1372, 64 USPQ2d 1926, 1932 (Fed. Cir. 2002); *Rheox*, 276 F.3d at 1327, 61 USPQ2d at 1374; *CVI/Beta Ventures, Inc. v. Tura LP*, 112 F.3d 1146, 1159, 42 USPQ2d 1577, 1583 (Fed. Cir. 1997); *Southwall Techs. Corp. v. Cardinal IG Co.*, 54 F.3d 1570, 1576, 34 USPQ2d 1673, 1676 (Fed. Cir.), *cert. denied*, 116 S.Ct. 515 (1995).

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Because Wouters does not disclose all of the elements of either claim 13 or claim 22, reversal of the improper §102(e) rejection of claims 13 and 22 by the Board is requested.

## **2. Dependent claims 14-16**

Claim 14 recites "said key code corresponds to a second function of a second electronic consumer device, as well as to said function of said electronic consumer device" (emphasis added). Wouters does not disclose one key code that corresponds to two separate functions of two different electronic consumer devices.

The Examiner has not stated that Wouters discloses a single key code that corresponds to two separate functions. Instead, the Examiner states, "A key code corresponding to a second and third key code is therefore transmitted based on the selected key." (Office Action, p. 4, lines 10-11) (emphasis added). In addition, the Examiner states that "Wouters teaches a key code generator (3) for generating key codes for controlling different function on various electrical appliances (col. 1 lines 24-26, col. 3 lines 21-35). The key codes for controlling the different devices inherently include a first and second key code." (Office Action, p. 2, lines 17-20) (emphasis added). However, claim 14 does not recite a first and second key code. Instead, claim 14 recites "said key code", "said function" and "a second function". The Examiner has not stated that Wouters discloses one key code that corresponds both to a function of an electronic consumer device as well as to a second function of a second electronic consumer device.

Claim 16 recites "said key code comprises a first binary number and a second binary number, said first binary number corresponding to said function, and said second binary number corresponding to said second function" (emphasis added). Wouters does not disclose a single key code that comprises two binary numbers, one corresponding to the function of one electronic

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consumer device, and the other corresponding to a second function of a second electronic consumer device.

The Examiner has not presented a *prima facie* argument of anticipation of claim 16 because the Examiner has not stated that Wouters discloses a key code comprising both (i) a first binary number that corresponds to a function of an electronic consumer device as well as (ii) a second binary number that corresponds to a second function of a second electronic consumer device. Instead, the Examiner simply states, "The data from the memory is inherently store as binary data. The key code therefore comprises binary data." (Office Action, p. 4, lines 13-14). The Examiner does not mention a first binary number of a key code corresponding to a first function, as well as a second binary number of the same key code corresponding to a second function.

Claims 14-16 depend directly or indirectly from claim 13. In addition to the reasons explained above, dependent claims 14-16 are allowable for at least the same reasons for which claim 13 is allowable. Reversal of the improper §102(e) rejection of claims 14-16 by the Board is requested.

### **3. Dependent claim 24**

Claim 24 recites that the means of claim 22 is a microcontroller. The means of claim 22 is a "means for receiving a key code from said RF receiver". The Examiner states that Wouters discloses "a microcontroller in the form of a microprocessor for receiving the key code (col. 4 lines 52-55)" (Office Action, p. 5, lines 1-2). The passage of Wouters cited by the Examiner, however, does not disclose a microprocessor for receiving a key code from an RF receiver.

The remote control unit disclosed in the passage cited by the Examiner does not include an RF receiver. Therefore, the central processing unit (CPU) that is inside remote control unit 3 of Wouters does not receive a key code from any RF receiver. Instead, Wouters discloses that the CPU determines which code needs transmitting based on which key is tapped by the user. (No keypad is included in the devices in room 2 of Wouters.) Wouters explains:

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"In this case the user taps a key, the CPU (Central processing unit) inside the remote control determines which code (corresponding to the tapped key) needs transmitting (by IR or RF) and fetches the required data from its memory which comprises a data base or other means in which tapped codes are linked to data to be transmitted" (Wouters, col. 4, lines 57-62) (emphasis added).

Thus, Wouters does not disclose a microcontroller that receives a key code from an RF receiver.

Claim 24 depends from claim 22. In addition to the reasons explained above, dependent claim 24 is allowable for at least the same reasons for which claim 22 is allowable. Reversal of the § 102(e) rejection and allowance of claim 24 are requested.

#### **4. Independent claim 19**

Claim 19 recites, "said codeset including said first key code and said second key code, wherein said first key code corresponds to a selected function of a first electronic consumer device, and wherein said second key code corresponds to said selected function of a second electronic consumer device" (emphasis added). Wouters does not form the basis for a valid rejection under §102(e) because Wouters does not disclose a codeset that includes two key codes: one key code corresponding to a function of one electronic consumer device, and the other key code corresponding to the same function ("said selected function") of another electronic consumer device.

The Examiner has not presented a *prima facie* argument of anticipation of claim 19 because the Examiner has not stated that Wouters discloses the two recited key codes that correspond to the same function on different electronic consumer devices. Nor has the Examiner stated that Wouters discloses that those two key codes are included in a codeset stored on a key code generator device. In fact, Wouters does not mention key codes that correspond to the same function on separate electronic consumer devices.

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Because Wouters does not disclose all of the elements of claim 19, reversal of the improper §102(e) rejection of claim 19 by the Board is requested.

#### **5. Independent claim 25**

Claim 25 recites, "receiving a keystroke indicator signal from a remote control device; . . . transmitting said key code signal from said key code generator device to said remote control device, wherein said remote control device transmits said key code signal to an electronic consumer device." (emphasis added). Wouters does not form the basis for a valid rejection of claim 25 under § 102(e) because Wouters does not disclose (i) receiving a keystroke indicator signal from a remote control device, (ii) transmitting a key code signal to the remote control device, and then (iii) transmitting the key code signal from the remote control device to an electronic consumer device.

The Examiner has not stated a *prima facie* case of anticipation because that Examiner has not alleged that Wouters discloses (i) receiving a signal from a remote control device, (ii) transmitting a second signal to the remote control device, and (iii) transmitting a third signal from the remote control device. Instead, the Examiner states that Wouters discloses:

"receiving a key stroke indicator signal (5) from a remote control (3) and the key code indicator signal is used by key code generator 8 to generate a key code (col. 3 lines 21-30); modulating the key code signal unto a carrier and transmitting the key code to the remote control (12) (col. 4 lines 28-33) and the remote control transmit the key code to the electronic device (col. 3 lines 31-34). Wouters et al. teaches the key code receive by the remote control is demodulated, decoded and transmitted to the appliance (col. 4 lines 25-37)." (Office Action, p. 5, lines 3-9) (emphasis added)

The Examiner argues that the recited "keystroke indicator signal" is disclosed by infrared signal 5 of Wouters. Moreover, the Examiner argues that the recited "remote control device" is infrared remote control unit 3 of Wouters. But then the Examiner improperly argues that the item labeled 12 in room 2 of Wouters is also the recited remote control device. This is improper. The Examiner has engaged



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in improper claim construction by arguing (i) that the recited remote control device from which a keystroke indicator signal is received is disclosed by item 3 in room 1 of Wouters for purposes of one claim limitation, and (ii) that the same recited remote control device is disclosed by item 12 in room 2 of Wouters for purposes of another limitation of the same claim. Alternatively, the Examiner is arguing that the recited remote control device is in two rooms of Wouters at the same time. Therefore, Wouters does not disclose the recited remote control device from which a first signal is received and to which a second signal is transmitted.

An additional reason why the Examiner's argument fails is that Wouters does not disclose that item 12 in figure 1 is a remote control device. The reference numeral 12 does not appear at all in the specification of Wouters.

Because Wouters does not disclose all of the elements of claim 25, reversal of the improper §102(e) rejection of claim 25 by the Board is requested.

#### **6. Dependent claim 26**

Claim 26 recites, "wherein said codeset is not stored on said remote control device". The Examiner states that infrared remote control unit 3 of Wouters discloses the recited "remote control device". (Office Action, p. 5, line 4) The Examiner also states, "The key code is therefore not stored in the memory of the remote control" (Office Action, p. 5, lines 9-10). First, the Examiner has not stated a *prima facie* case of anticipation of claim 26 because claim 26 does not recite "wherein the key code is not stored on said remote control device". Second, Wouters does not disclose that a codeset is not stored on infrared remote control unit 3. In fact, Wouters suggests the contrary:

"In this system a remote control unit is used which comprises both an IR transmitter and an antenna for transmission of RF signals. In this case the user taps a key, the CPU (Central processing unit) inside the remote control determines which code (corresponding to the tapped key) needs transmitting (by IR or RF) and fetches the required data from its memory which comprises a data base or other means in which

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tapped codes are linked to data to be transmitted." (Wouters, col. 4, lines 54-62) (emphasis added).

Third, dependent claim 26 is allowable for at least the same reasons for which claim 25 is allowable because claim 26 depends from claim 25. Reversal of the improper §102(e) rejection of claim 26 by the Board is requested.

**B. Claims 1, 3-4 and 9 (2nd ground of rejection)**

Claims 1, 3-4 and 9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Pope (USP 5,963,624) in view of McNair et al. (USP 5,595,342) (Office Action, p. 6, lines 1-2). To establish a *prima facie* case of obviousness, the Examiner must demonstrate that "the reference (or references when combined) must teach or suggest all the claimed limitations." MPEP § 2142.

**1. Independent claim 1**

Claim 1 recites, "(a) receiving a keystroke indicator signal from a remote control device; (b) generating a key code within a key code generator device . . . generating a key code signal". The combination of Pope and McNair does not form the basis for a valid rejection of claim 1 under § 103(a) because the references when combined do not teach (i) generating a key code within a key code generator device, (ii) a keystroke indicator signal as well as a key code signal, or (iii) modulating a key code.

**(i) Neither Pope nor McNair teaches generating a key code within a key code generator device.**

The Examiner states that "Pope teaches receiving a keystroke indicator signal which contains an indication of a key on the remote control device 10 that was pressed (col. 2 lines 61-col. 3 line 19), generating a key code (codes for communicating the control function to the appliances) within the code generator 12 ..." (Office Action, p. 6, lines 3-6) (emphasis added). Pope does not,

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however, teach generating a key code within base unit 12. The appliance control code that is transmitted by base unit 12 of Pope is not generated within base unit 12. Instead, base unit 12 receives the appliance control codes from handset 10/50. In Pope, a digital cordless telephone handset 10/50 is used as a universal remote control device to control electrical appliances. Pope explains:

“The present invention uses a digital cordless telephone handset to store a variety of appliance control codes. These appliance control codes can be transmitted to a base unit. The base unit can translate the appliance control codes to control signals such as infrared control signals, to control an electrical appliance” (Pope, col. 1, lines 31-36) (emphasis added). See also Pope, col. 2, lines 48-52 and 63-65.

The appliance control codes are not generated within the base unit 12 of Pope. Instead, the appliance control codes are transmitted from the handset 10/50 to the base unit 12, where they are translated to control signals. Base unit 12 of Pope does not receive a keystroke indicator and then generate a key code. Thus, Pope does not teach the recited “receiving a keystroke indicator signal from a remote control device” (emphasis added). Pope states, “Once an appliance control code is received by the base unit, the base unit will know to transfer the control code to an appliance” (Pope, col. 4, lines 49-51) (emphasis added). Thus, in Pope, an appliance control code is received by base unit 12 and is then transferred to an appliance; the appliance control code is not generated within base unit 12.

**(ii) Pope and McNair do not teach both a keystroke indicator signal and a key code signal.**

The Examiner states that “Pope teaches receiving a keystroke indicator signal which contains an indication of a key on the remote control device 10 that was pressed (col. 2 lines 61-col. 3 line 19), . . .” (Office Action, p. 6, lines 3-6). Nowhere, however, does Pope teach a keystroke indicator signal in the passage cited by the Examiner, which is reproduced below in its entirety:

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"Keypad 30 includes the numbers 1-9, the "star" and the "pound" key. Additionally, "up arrow" key 30a and "down arrow" key 30b can be used to scroll through a menu. A "transmit" key 30c can be used to transmit the appliance control code once the appliance control has been selected. In one embodiment, the user gets into the menu by pressing an "up arrow" or a "down arrow" key. Alternately a "menu" button (not shown) is used. The keys for numbers 1-9 can have different meanings once the user is in the menu. Menu functions can be printed above the normal telephone control keys. FIG. 1 shows compact disc, television, cable and AC signal control menu-function buttons. The setup menu can be entered, one of these buttons pressed, and then using the up and down arrows, the specific controls for a given electrical appliance can be scrolled through. The different appliance controls can be listed in the order of frequency of use. For example, the "mute" function could be the first function listed in each menu selection.

Alternately, individual functions can be mapped with the associated buttons of the keypad, and a display 32 need not be used. Buttons similar to a "shift," "alt," and "control" on a normal computer keypad can be used to change the meanings of buttons "0" to "9," "star," and "pound." The different meanings associated with different buttons can be printed in different colors, which are the same colors of the associated buttons "shift," "alt," or "control."" (Pope, col. 2, line 61 – col. 3, line 19) (emphasis added)

Thus, the passage of Pope above teaches appliance controls and appliance control codes but does not teach a keystroke indicator signal as the Examiner maintains.

Moreover, it is improper to construe the appliance control codes of Pope to teach both a keystroke indicator signal and a key code signal. According to the tenets of claim differentiation, a "keystroke indicator signal" cannot be interpreted to be the same as a "key code signal". Such a claim interpretation is presumptively unreasonable. See, e.g., Karlin Tech. Inc. v. Surgical Dynamics Inc., 177 F.3d 968, 50 USPQ2d 1465, 1468 (Fed. Cir. 1999). In addition, such a claim interpretation would render claim 1 internally inconsistent because "keystroke indicator/key code" information that was already received by the key code generator device would later be generated by the key code generator device. Thus, Pope does not teach both a keystroke indicator and a key code.

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The handset 10/50 of Pope transmits an appliance control code and not a keystroke indicator.

**(iii) Neither Pope nor McNair teaches modulating a key code.**

The Examiner admits that Pope is silent on teaching modulating a key code onto a carrier signal. (Office Action, p. 6, line 7) Moreover, McNair does not teach modulating a key code. McNair does not teach a key code. And the Examiner does not state that McNair teaches modulating a key code onto a carrier signal. Instead, the Examiner states that McNair teaches “the control signal is modulated” (Office Action, p. 6, line 8). This is insufficient to establish a *prima facie* case of obviousness.

Moreover, there would be no motivation to combine McNair with Pope even if McNair did disclose a limitation of claim 1 (which it does not). McNair is directed to a control system for a gas-fired, central heating system and does not concern key code signals for electronic consumer devices.

Therefore, Pope and McNair do not form the basis for a valid rejection under § 103(a) because neither Pope nor McNair teaches (i) generating a key code within a key code generator device, (ii) a keystroke indicator signal as well as a key code signal, or (iii) modulating a key code. In addition, there is no motivation to combine McNair with Pope to arrive at all of the limitations of claim 1. For these reasons, reconsideration of the § 103(a) rejection and allowance of claim 1 are requested.

**2. Dependent claims 3-4 and 9**

Claim 9 recites, “said key code generated in (b) is part of a codeset, and wherein said remote control device does not store said codeset” (emphasis added). With respect to base claim 1, the Examiner states that “Pope teaches receiving a keystroke indicator signal which contains an indication of a key on the remote control device 10” (Office Action, p. 6, lines 3-4) (emphasis added). Thus, the Examiner considers that handset 10 of Pope teaches the remote control device recited in claim 9. The Examiner then states, “The code

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generated by the code generator is not store in the remote control because it is transmitted to the appliances" (Office Action, p. 6, lines 18-19). This incorrectly characterizes the teachings of Pope. The appliance control codes of Pope are indeed stored on handset 10 and are transmitted from handset 10 to base unit

12. Pope explains:

"The present invention uses a digital cordless telephone handset to store a variety of appliance control codes. These appliance control codes can be transmitted to a base unit. The base unit can translate the appliance control codes to control signals such as infrared control signals, to control an electrical appliance" (Pope, col. 1, lines 31-36) (emphasis added)

"The cordless digital telephone handset includes a memory 66 . . . used to store the appliance control codes. Preferably, the appliance control codes can be transmitted to the base unit 12 . . ." (Pope, col. 2, lines 48-52) (emphasis added).

"Fig. 2 is a diagram of a handset 50 of the present invention. . . . The appliance control codes are stored in a memory 66" (Pope, col. 4, lines 17-28) (emphasis added).

Base unit 12 does not generate the appliance control codes. Instead, base unit 12 receives the appliance control codes, which were stored in memory 66 of handset 10, and then translates the appliance control codes into infrared control signals. Thus, Pope does not teach that handset 10 does not store a codeset.

Claims 3-4 and 9 depend from claim 1. In addition to the reasons explained above, dependent claims 3-4 and 9 are allowable for at least the same reason for which claim 1 is allowable. Reversal of the § 103(a) rejection and allowance of claims 3-4 and 9 by the Board is requested.

**C. Dependent claim 2 (3rd ground of rejection)**

Claim 2 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Pope in view of McNair and further in view of Goldstein (USP 5,410,326) (Office Action, p. 7, lines 1-2).

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Claim 2 includes the following limitations of base claim 1, "(a) receiving a keystroke indicator signal from a remote control device; (b) generating a key code within a key code generator device . . . ." Claim 2 also recites "wherein said key code signal is transmitted in (d) from said key code generator device to said remote control device".

None of Pope, McNair or Goldstein teaches either (i) generating a key code within a key code generator device or (ii) both a keystroke indicator signal and a key code signal. Moreover, the Examiner seems to admit that Pope and McNair are silent on teaching that the key code generator transmits the key code signal to the remote control device. (Office Action, p. 7, lines 4-10). And Goldstein does not teach this limitation.

None of Pope, McNair or Goldstein teaches transmitting a key code signal from the key code generator device back to the remote control device. The fact that Goldstein may teach sending an IR code or an entire codeset from a cable television converter box to a remote control device to update the remote control device does not teach transmitting a key code signal from a key code generator device back to the remote control device. Indeed, Goldstein does not teach transmitting a key code signal as opposed to a key code or a codeset. The cable television converter box of Goldstein does not teach a key code generator because the cable television converter box of Goldstein receives complete codesets from a remote database or is loaded with complete codesets. (Goldstein, col. 15, lines 20-68; col. 17, lines 62-67). The television converter box of Goldstein is not a key code generator because the GLUE logic 95 in the universal remote control 5, as opposed to the television converter box, generates the IR sequences from the codes. Goldstein states:

"The glue logic 95 will supply the IR sequences from codes, stored in the RAM 90, upon command of the user. . . . These codes describe carrier frequencies, pulse widths and pulse duration to be generated to the glue logic 95 for producing infrared pulses from the infrared diode 97" (Goldstein, col. 13, lines 23-33) (emphasis added).

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Thus, Goldstein does not teach transmitting a key code signal from a key code generator.

In addition, to establish obviousness, there must be "something in the prior art as a whole to suggest the desirability, and thus the obviousness of making the combination." *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1143, 227 USPQ 543, 551 (Fed. Cir. 1985) *quoting Lindemann Maschinenfabrik GMBH v. American Hoist Derrick Co.*, 730 F. 2d 1452, 1462, 221 USPQ 481, 488 (Fed. Cir. 1984). The motivation posited by the Examiner to combine Goldstein and Pope is non-existent. The Examiner states that Goldstein teaches "a cable box transmitting key codes to the remote control in order to update the remote control with new control codes." (Office Action, p. 7, lines 11-13) (emphasis added). But there would be no motivation to update the remote control device of claim 2 with new codesets, as allegedly taught by Goldstein, because claim 2 does not recite that any key code or codeset is ever stored on the remote control device. Claim 2 recites transmitting a key code signal to the remote control device and does not recite transmitting a codeset to the remote control device. The motivation proposed by the Examiner would only result in a combination wherein codesets, or at least key codes, are stored on a remote control device.

The combination of Pope, McNair and Goldstein does not form the basis for a valid rejection of claim 2 under § 103(a) because the combination does not teach (i) generating a key code within a key code generator device, (ii) both a keystroke indicator signal and a key code signal, or (iii) transmitting a key code signal from the key code generator device back to the remote control device. Furthermore, there is no motivation to combine the teachings of Goldstein with the teachings of Pope and McNair in such a way as to obtain all of the limitations of claim 2. Therefore, reversal of the improper § 103(a) rejection of claim 2 by the Board is requested.



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**D. Dependent claims 5 and 10 (4th ground of rejection)**

Claims 5 and 10 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Pope in view of McNair and further in view of Teskey (USP 6,747,568) (Office Action, p. 7, lines 14-16).

Claims 5 and 10 depend directly or indirectly from claim 1 and include the following limitations of claim 1: "(a) receiving a keystroke indicator signal from a remote control device; (b) generating a key code within a key code generator device . . . ." None of Pope, McNair or Teskey teaches (i) generating a key code within a key code generator device or (ii) both a keystroke indicator signal and a key code signal.

In addition, claim 10 recites that "said timing information describes a digital one and a digital zero". The Examiner admits that Pope "is silent on teaching the key code comprises timing information defining the binary number (ones and zeros) in modulated." But the Examiner states that Teskey "teaches the format of the remote control signal having the necessary timing and modulation information (col. line 60-col. 4 line 8)" (Office Action, p. 8, lines 7-10). Teskey does not, however, teach "the necessary timing and modulation information." The passage of Teskey cited by the Examiner does not teach timing information that defines a digital one or a digital zero. In fact, Teskey does not mention a digital one, a digital zero or any type of mark/space representation.

The combination of Pope, McNair and Teskey does not form the basis for a valid rejection of either claim 5 or claim 10 under § 103(a) because the combination does not teach (i) generating a key code within a key code generator device or (ii) both a keystroke indicator signal and a key code signal. And with regard to claim 10, Teskey does not teach timing information that defines a digital one or a digital zero. Therefore, reversal of the improper § 103(a) rejection of claims 5 and 10 by the Board is requested.

**E. Dependent claim 6 (5th ground of rejection)**

Claim 6 is rejected under 35 U.S.C. § 103(a) as being unpatentable over

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Pope in view of McNair and further in view of August (USP 5,671,267) (Office Action, p. 8, lines 16-18).

Claim 6 includes the following limitations of base claim 1, "(a) receiving a keystroke indicator signal from a remote control device; (b) generating a key code within a key code generator device . . . ." None of Pope, McNair or August teaches (i) generating a key code within a key code generator device or (ii) both a keystroke indicator signal and a key code signal.

In addition, claim 6 recites, "(e) pressing a power-on key of said remote control device causing said remote control device to transmit said keystroke indicator signal that is received in (a), wherein said key code signal transmitted in (d) is received onto an electronic consumer device, and wherein said pressing in (e) causes said electronic consumer device to turn on" (emphasis added). The Examiner states that Pope "is not explicit in teaching transmitting a keystroke indicator signal that cause the appliance to turn on. One skill in the art recognizes that a remote control is generally use in turning an appliance on/off and is further evidence by August et al. (col. 8 lines 3-5)" (Office Action, p. 8, line 20 – p. 9, line 2). The Examiner has not presented a *prima facie* case of obviousness because the Examiner has not stated that August teaches a remote control device transmitting a keystroke indicator signal. Indeed, August does not teach a keystroke indicator signal. The passage of August cited by the Examiner teaches handset unit 10 of August using a key code signal, as opposed to a keystroke indicator signal, to turn a television set on and off. Interpreting a "keystroke indicator signal" to be the same as a "key code signal" would be contrary to the tenets of claim differentiation.

The combination of Pope, McNair and August does not teach (i) receiving a keystroke indicator signal from a remote control device, (ii) generating a key code within a key code generator, and (iii) transmitting a key code signal from the key code generator to an electronic consumer device to turn on the electronic consumer device. Nor does the combination teach both a keystroke indicator

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signal and a key code signal. Reversal of the improper § 103(a) rejection of claim 6 by the Board is requested.

**F. Dependent claim 7 (6th ground of rejection)**

Claim 7 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Pope in view of McNair and further in view of Wouters (Office Action, p. 9, lines 8-10).

Claim 7 includes the following limitations of base claim 1, "(a) receiving a keystroke indicator signal from a remote control device; (b) generating a key code within a key code generator device . . . ." The combination of Pope, McNair and Wouters teaches neither (i) generating a key code within a key code generator device nor (ii) both a keystroke indicator signal and a key code signal.

In addition, claim 7 recites "wherein said key code signal is received by said remote control device". The Examiner states that "Pope teaches the remote control receiving key code signals (infrared control signal) from a controller (col. 4 lines 52-56)" (Office Action, p. 9, lines 11-12). The Examiner has not presented a *prima facie* case of obviousness because the Examiner has not stated that Pope teaches a remote control device that receives a key code signal from a key code generator device that generated the key code. The passage of Pope cited by the Examiner teaches receiving an infrared signal from a controller, such as a television remote control. The cited passage does not teach receiving a key code signal from a key code generator device. Interpreting a "remote control device" to be the same as a "key code generator device" recited in the same claim would be contrary to the tenets of claim differentiation.

The combination of Pope, McNair and Wouters does not form the basis for a valid rejection of claim 7 under § 103(a) because the combination does not teach any of (i) generating a key code within a key code generator device, (ii) both a keystroke indicator signal and a key code signal, or (iii) receiving a key code signal from the key code generator device back on the remote control

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device. Therefore, reversal of the improper § 103(a) rejection of claim 7 by the Board is requested.

**G. Dependent claim 8 (7th ground of rejection)**

Claim 8 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Pope in view of McNair and in view of Wouters and further in view of August (Office Action, p. 10, lines 1-3).

The four-way combination of Pope, McNair, Wouters and August does not form the basis for a valid rejection of claim 8 under § 103(a) for the same reasons explained above with relation to claims 1 and 7. The 4-way combination does not teach any of (i) receiving a key code signal from the key code generator device back on the remote control device, (ii) both a keystroke indicator signal and a key code signal, or (iii) generating a key code within a key code generator device.

Furthermore, it is impermissible to "pick and choose" individual elements among the references to recreate the claimed invention because "[o]ne cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention." *In re Fritch*, 972 F.2d 1260, 1266, 23 USPQ2d 1780, 1784 (Fed. Cir. 1992) *citing In re Fine*, 837 F.2d 1071, 1075, 5 USPQ2d 1596, 1600 (Fed. Cir. 1988). There is no motivation to combine the teachings of the four-way combination in such a way as to obtain all of the limitations of claim 8. For these reasons, reversal of the improper § 103(a) rejection of claim 8 by the Board is requested.

**H. Dependent claim 18 (8th ground of rejection)**

Claim 18 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Wouters in view of Teskey (Office Action, p. 10, lines 14-15).

The combination of Wouters and Teskey does not form the basis for a valid rejection of claim 18 under § 103(a) for the same reasons explained above

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with relation to claim 13. Neither Wouters nor Teskey discloses a device with a keypad that both transmits an IR signal and receives an RF signal.

Because combination of Wouters and Teskey does not disclose all of the elements of claim 18, reversal of the improper § 103(a) rejection of claim 18 by the Board is requested.

**I. Dependent claims 20-21 (9th ground of rejection)**

Claims 20-21 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Wouters in view of August (Office Action, p. 11, lines 6-7).

Both claim 20 and claim 21 depend from claim 19 and incorporate the limitations of claim 19. The combination of Wouters and August does not form the basis for a valid rejection of either claim 20 or claim 21 under § 103(a) for the same reasons explained above with relation to claim 19. Neither Wouters nor August discloses a codeset that includes two key codes: one key code corresponding to a function of one electronic consumer device, and the other key code corresponding to the same function of another electronic consumer device. The Examiner has not presented a *prima facie* argument of obviousness because the Examiner has not stated that the combination of Wouters and August discloses a codeset with two recited key codes that correspond to the same function on different electronic consumer devices. Neither Wouters nor August teaches the recited codeset with key codes that correspond to the same function on separate electronic consumer devices. August does not mention a codeset.

Because combination of Wouters and August does not disclose a codeset with two key codes that correspond to the same function on two electronic consumer devices, reversal of the improper § 103(a) rejection of claims 20-21 by the Board is requested.

**J. Dependent claim 23 (10th ground of rejection)**

Claim 23 is rejected under 35 U.S.C. § 103(a) as being unpatentable over

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Wouters in view of Pope (Office Action, p. 11, lines 18-19).

Claim 23 depends from claim 22 and incorporates the limitations of claim 22. The combination of Wouters and Pope does not form the basis for a valid rejection of claim 23 under § 103(a) for the same reasons explained above with relation to claim 22. Neither Wouters nor Pope teaches a device with a keypad, a radio frequency receiver and an infrared transmitter.

The RF receiver, IR transmitter and keypad of Wouters are not on the same device. The remote control unit 3 of Wouters does not include an RF receiver. Pope does not teach an RF receiver. And Pope even teaches against including an IR transmitter on the handset. Pope explains:

"One advantage of having the infrared transmitter attached to the base unit 12 is that the base unit 12 can be typically powered by house current. Since no battery is used, the infrared transmitter can draw more power than is used in battery-type systems. For example, if a button is continuously pressed in a battery-type system, in order to conserve power the infrared signal is not continuously sent, but is sent intermittently. The base unit 12 connected to AC power need not be limited in this fashion. Additionally, it is also possible to have the base unit 12 supply a greater amount of power to the infrared transmitter to transmit a greater amount of infrared energy. In this manner, it may be possible for the infrared bulb to not be focused directly towards the appliance" (Pope, col. 3, lines 46-60) (emphasis added).

Thus, Pope teaches away from the limitation of claim 23 because "it suggests that the line of development flow from the reference's disclosure is unlikely to be productive of the result sought by the applicant." *In re Gurley*, 27 F.3d 551, 553, 31 USPQ2d 1130, 1131 (Fed. Cir. 1994).


Because the combination of Wouters and Pope does not disclose all of the limitations of claim 23 as explained above with relation to claim 22, reversal of the improper §103(a) rejection of claim 23 by the Board is requested.

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### VIII. CONCLUSION

The Examiner has not established a prima facie case of anticipation or obviousness. With regard to independent claims 13 and 22, Wouters does not disclose a device with a keypad that both receives a signal within a radio frequency band and transmits a signal within an infrared frequency band. With regard to independent claim 19, Wouters does not disclose a codeset that includes two key codes: one key code corresponding to a function of one electronic consumer device and the other key code corresponding to the same function of another electronic consumer device. With regard to independent claim 25, Wouters does not disclose (i) receiving a keystroke indicator signal from a remote control device, (ii) transmitting a key code signal to the remote control device, and then (iii) transmitting the key code signal from the remote control device to an electronic consumer device. With regard to independent claim 1, the combination of Pope and McNair does not teach (i) generating a key code within a key code generator device, (ii) a key stroke indicator signal as well as a key code signal, or (iii) modulating a key code. The Board is requested to reverse the §102 and §103 rejections of claims 1-10, 13-16, 18-26.

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Mail Stop Appeal Brief - Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

By   
Darien K. Wallace

Date of Deposit: March 24, 2007

Respectfully submitted,



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## **IX. CLAIMS APPENDIX**

1. (original): A method comprising:

- (a) receiving a keystroke indicator signal from a remote control device;
- (b) generating a key code within a key code generator device;
- (c) modulating said key code onto a carrier signal, thereby generating a key code signal; and
- (d) transmitting said key code signal from said key code generator device.

2. (original): The method of Claim 1, wherein said key code signal is transmitted in (d) from said key code generator device to said remote control device.

3. (original): The method of Claim 1, wherein said key code signal is transmitted in (d) from said key code generator device to an electronic consumer device.

4. (original): The method of Claim 1, wherein said key code consists of a binary number.

5. (original): The method of Claim 1, wherein said key code comprises a binary number and timing information, and wherein said timing information defines how said binary number is modulated in (c) onto said carrier signal.

6. (original): The method of Claim 1, further comprising:

- (e) pressing a power-on key of said remote control device causing said remote control device to transmit said keystroke indicator signal that is received in (a), wherein said key code signal transmitted in (d) is received onto an electronic consumer device, and wherein said pressing in (e) causes said electronic consumer device to turn on.



7. (original): The method of Claim 1, wherein said carrier signal is in a radio frequency band, wherein said key code signal is received by said remote control device, and wherein said method further comprises:

(e) modulating said key code onto a second carrier signal, thereby generating a second key code signal, said modulating being performed on said remote control device wherein said second carrier signal is in an infrared frequency band; and

(f) transmitting said second key code signal from said remote control device to an electronic consumer device.

8. (original): The method of Claim 7, further comprising:

(g) pressing a power-on key of said remote control device causing said remote control device to transmit said keystroke indicator signal that is received in (a), wherein the pressing in (g) causes said electronic consumer device to turn on.

9. (original): The method of Claim 1, wherein said key code generated in (b) is part of a codeset, and wherein said remote control device does not store said codeset.

10. (original): The method of Claim 9, wherein said codeset comprises timing information and a plurality of key codes, and wherein said timing information describes a digital one and a digital zero.

11. (previously presented): A method comprising:

(a) receiving a keystroke indicator signal from a remote control device;

(b) generating a key code within a key code generator device;

(c) modulating said key code onto a carrier signal, thereby generating a key code signal; and

(d) transmitting said key code signal from said key code generator device, wherein a codeset comprises a plurality of key codes, each one of said plurality

of key codes corresponding to a function of an electronic consumer device, and wherein no more than a single one of said plurality of key codes is present on said remote control device at any given time.

12. (original): The method of Claim 11, wherein said function of said electronic consumer device is taken from the group consisting of: power on, power off, channel advance, channel back, volume up, volume down, cursor up, cursor down, cursor right, cursor left, select, play, record, stop, forward, back and pause.

13. (previously presented): A remote control device comprising:

- a receiver that receives a first key code signal, wherein said first key code signal is generated by modulating a key code onto a first carrier signal, said first carrier signal falling within a radio frequency band;

- a transmitter that transmits a second key code signal, wherein said second key code signal is generated by modulating said key code onto a second carrier signal, said second carrier signal falling within an infrared frequency band; and

- a keypad that includes a key that corresponds to said key code, wherein said key code corresponds to a function of an electronic consumer device.

14. (original): The device of Claim 13, wherein said key code corresponds to a second function of a second electronic consumer device, as well as to said function of said electronic consumer device.

15. (original): The device of Claim 14, wherein said transmitter transmits a third key code signal, and wherein said third key code signal is generated by modulating said key code onto a third carrier signal.

16. (original): The device of Claim 14, wherein said key code comprises a first binary number and a second binary number, said first binary number

corresponding to said function, and said second binary number corresponding to said second function.

17. (previously presented): A device comprising:

- a receiver that receives a first key code signal, wherein said first key code signal is generated by modulating a key code onto a first carrier signal, said first carrier signal falling within a radio frequency band;

- a transmitter that transmits a second key code signal, wherein said second key code signal is generated by modulating said key code onto a second carrier signal, said second carrier signal falling within an infrared frequency band; and

- a keypad that includes a key that corresponds to said key code, wherein said key code corresponds to a function of an electronic consumer device, wherein said keypad includes a second key that corresponds to a second key code, wherein a third key code signal is generated by modulating said second key code onto a third carrier signal, wherein said third key code signal is received by said receiver, and wherein both said first key code and said second key code are not both stored in said device at the same time.

18. (original): The device of Claim 13, wherein a codeset comprises timing information and a plurality of key codes, wherein each of said plurality of key codes corresponds to a different function of said electronic consumer device, wherein said key code is a binary number, and wherein said timing information defines how said binary number is modulated onto said first carrier signal.

19. (previously presented): A system comprising:

- a key code generator device that generates a first key code and a second key code, wherein a codeset is stored on said key code generator device, said codeset including said first key code and said second key code, wherein said first key code corresponds to a selected function of a first electronic consumer

device, and wherein said second key code corresponds to said selected function of a second electronic consumer device; and

means for relaying said first key code and said second key code from said key code generator device through a remote control device to said first electronic consumer device and to said second electronic consumer device without simultaneously storing both said first key code and said second key code on said remote control device.

20. (original): The system of Claim 19, wherein said selected function is taken from the group consisting of: power on, power off, channel advance, channel back, volume up, volume down, cursor up, cursor down, cursor right, cursor left, select, play, record, stop, forward, back and pause.

21. (original): The system of Claim 19, wherein said selected function is power on, and wherein said system automatically determines when said first electronic consumer device powers on.

22. (previously presented): A remote control device, comprising:

- a keypad;
- an RF receiver;
- an IR transmitter; and

means for receiving a key code from said RF receiver and for sending said key code to said IR transmitter such that said key code is modulated onto an IR carrier signal, said IR carrier signal with said key code modulated thereon being transmitted from said remote control device by said IR transmitter.

23. (original): The remote control device of Claim 22, wherein said key code is not stored on said remote control device immediately prior to said means receiving the key code.

24. (original): The remote control device of Claim 22, wherein said means is a microcontroller.

25. (previously presented): A method comprising:

- (a) receiving a keystroke indicator signal from a remote control device;
- (b) using said keystroke indicator signal to generate a key code, wherein a key code generator device generates said key code;
- (c) modulating said key code onto a carrier signal and thereby generating a key code signal; and
- (d) transmitting said key code signal from said key code generator device to said remote control device, wherein said remote control device transmits said key code signal to an electronic consumer device.

26. (previously presented): The method of Claim 25, wherein said key code generated in (b) is part of a codeset, and wherein said codeset is not stored on said remote control device.

## **X. EVIDENCE APPENDIX**

No evidence has been submitted pursuant to 37 C.F.R. §§ 1.130, 1.131 or 1.132. No affidavit or declaration has been submitted under § 1.130 to disqualify a commonly owned patent or a published application as prior art. No affidavit or declaration of a prior invention has been submitted under § 1.131. No affidavit or declaration traversing rejections or objections has been submitted under § 1.132. No such evidence was entered by the Examiner and relied upon by Appellants in this appeal.

In the rejections that are to be reviewed in this appeal, the Examiner has not relied upon any non-patent documents.

## **XI. RELATED PROCEEDINGS APPENDIX**

No decision has yet been rendered by a court or the Board in this or any related proceeding.